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IS 14926 (2001): Alpine Skis - Guidelines for Conducting Slope Performance Tests [PGD 27: Mountaineering Equipment]



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“Knowledge is such a treasure which cannot be stolen”

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भारतीय मानक

अल्पाइन स्काइस — स्लोप प्रदर्शन करने हेतु दिशा निर्देश

Indian Standard

ALPINE SKIS — GUIDELINES FOR CONDUCTING
SLOPE PERFORMANCE TESTS

ICS 97.220.20

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BUREAU OF INDIAN STANDARDS
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FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Mountaineering Equipment Sectional Committee and approved by the Basic and Production Engineering Division Council.

This standard describes the guidelines for conducting slope performance testing of alpine skis and provides a basis, as the subject is still under development. This may also be used as a safety standard for the skis used in high altitude.

This standard may be used by the laboratories and users for the testing of the alpine skis. However, this standard may also be used by manufacturers in their in-house testing laboratories.

In the preparation of this standard, assistance has been derived from the Technical Report ISO/TR 8783 : 1985 'Alpine skis — Guidelines for conducting slope performance tests' prepared by Sports and Recreational Equipment Technical Committee (ISO/TC 83) of International Organization for Standardization (ISO).

In reporting the results of a test or analysis made in accordance with this standard, if the final value, observed or calculated, is to be rounded off, it shall be done in accordance with IS 2:1960 'Rules for rounding off numerical values (*revised*)'.

Indian Standard

ALPINE SKIS — GUIDELINES FOR CONDUCTING SLOPE PERFORMANCE TESTS

1 SCOPE

1.1 This Indian Standard describes the guidelines for carrying out comparative testing of alpine skis with the objective of evaluating the performance characteristics.

1.2 It is applicable to alpine skis in accordance with IS 9317 : 2001 'Glossary of terms, definitions and measuring conditions for skis (*first revision*)'.

2 PRINCIPLE

2.1 Evaluation of ski performance through:

- a) subjective and comparative rating by competent test personnel based on test criteria provided; and
- b) statistical support by using sufficient individual results with regard to test personnel, terrain conditions and test skis.

3 TEST PERSONNEL

3.1 Requirements

The test personnel shall be independent, neutral and discreet, as responsible experts.

3.2 Condition

The physical condition (strength, speed, staying power) of personnel shall be sufficient for the tasks of the test.

3.3 Skiing Ability

3.3.1 The skiing ability of personnel shall be such that a representative evaluation of the skis in accordance with the test run is ensured. The test person shall be capable and shall be trained to ski techniques typical of defined skier groups and to skiing motions treated as single movements.

3.3.2 The test report shall indicate if a fast skier deviates greatly in body height and/or weight from the average of defined skier groups.

3.4 Assessment Ability

The test person shall be completely informed about all evaluation criteria and about the system rating scale.

4 TEST SKIS

4.1 In order to avoid influencing testers, graphics on

the top surfaces of skis shall be uniformly covered. The finish of the skis shall be recorded, as under

- a) flatness of running surface;
- b) deburred steel edges; and
- c) rounded steel edges at extremities.

4.2 The running surfaces shall be cleaned and uniformly waxed in accordance with the snow conditions at the time of the test.

4.3 The test report shall indicate whether the skis are tested as-delivered or whether they are treated for the test.

4.4 For each tester, the boot and binding shall be fitted correctly in relation to the mounting point of the ski, for example by the use of bindings with a movable toe-piece.

5 TEST RUN

5.1 The test run shall provide terrain on which all skiing manoeuvres can be carried out. The site shall permit every tester to conduct the same manoeuvres at the same place on the slope.

5.2 The test shall be carried out in constant snow conditions. There shall be an opportunity to test performance on hard snow.

6 RATING

6.1 Rating Method

At least the following criteria shall be listed in the questionnaire:

- a) turning performance (*see 6.1.1*);
- b) tracking stability (*see 6.1.2*);
- c) edge grip (*see 6.1.3*);
- d) steering sensitivity (*see 6.1.4*); and
- e) suitability for higher speeds (*see 6.1.5*).

To rate these performance characteristics, certain skiing manoeuvres shall be defined. Appropriate speeds and the demands of the terrain shall therefore be chosen in accordance with the skier ability level of the intended target group.

6.1.1 Turning Performance

6.1.1.1 Rating shall be based on the necessary effort and on the number of short turns within a certain distance, with reference to the following:

- a) release of skidded phases;
- b) initiation of carved turning phases;
- c) sequences of short turns initiated through edge change;
- d) short turns without unweighting the ski on flat terrain; and
- e) step turns.

6.1.2 Tracking Stability

6.1.2.1 Traversing (ski on edge) over longer distances and schussing (skis flat) at speed in accordance with the performance level of the target group.

6.1.2.2 Rating should be based on observations with respect to deviation from lateral and vertical stability.

6.1.3 Edge Grip

6.1.3.1 Breaking of sideslip and stop through turning skis side-on to direction of movement; change of speed (quantity and direction) by controlled slipping (for example marking with gate poles).

6.1.3.2 Evaluation shall be based on stopping distance and the effort required for steering. Attention should be paid to juddering and loss of control.

6.1.4 Steering Sensitivity

6.1.4.1 Evaluation shall be based on the effort needed for steering, on tendencies to oversteer or understeer and on tendency to lose control or tramline, with reference to the following:

- a) reduction of turn radii through leg rotation and increase of edge pressure (carving);
- b) parallel turns on slopes with medium snow movement resistance; and
- c) stem christies with different radii.

6.1.5 Suitability For Higher Speeds

6.1.5.1 Schussing on suitable slopes at a speed of approximately 70 km/h (44 mile/h), and giant slalom turns.

6.1.5.2 Evaluation should be based on observations with respect to directional stability and steering characteristics.

6.2 Classification

6.2.1 For proper comparative rating, it is necessary to use a ski with standard characteristics. This control

ski shall be used repeatedly by all testers. Tests skis are rated by comparison with performance of the control skis.

6.2.2 To judge characteristics, a rating scale of five grades should be used:

- 1 = very good;
- 2 = good;
- 3 = satisfactory (no special positive or negative characteristics);
- 4 = poor; and
- 5 = very poor.

6.3 Special Attributes

6.3.1 For particular attributes, which are not listed in the questionnaire, verbal commentary is permitted.

6.4 Deviation

6.4.1 If a ski under test is rated very differently by testers (more than one grade difference), the whole group of testers shall try to analyze the reason for such a discrepancy. Following this, the test shall be repeated.

7 TEST REPORT

7.1 The test report shall include a description and the lengths of the skis tested, individual ratings given, total scores and standard deviations, as well as any significant deviation from the average values of the defined skier groups (that is test person weight or height, ski-length).

8 PUBLICATION OF TEST RESULTS

8.1 Published test results shall provide information on all test and snow conditions.

8.2 If ski characteristics are described verbally (see 6.3), only clearly defined technical terms should be used.

8.3 If the publication provides information in the form of an overall score, the weight of individual ratings and the reasoning for this weighting system shall be explained. All considerations which have led to the overall score shall be published.

8.4 An appropriate person or body shall take legal responsibility for carrying out tests and publication of the test results.

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Amendments Issued Since Publication

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